Earth and Space Exploration (Exploration Systems Design), BS

As an earth and space exploration major, you will be crossing the boundaries of science and engineering while preparing for a new era of exploration. In the exploration systems design concentration you can build space-flight hardware, engineer solutions to explore extreme environments and take a systems-based approach to scientific discovery.

Program Description

The BS program in earth and space exploration with a concentration in exploration systems design offers students a fundamental curriculum in geology, physics and astrophysics while providing tools that enable them to design and build hardware and software to explore Earth and the universe beyond.

The program has a rigorous and quantitative grounding in the fundamentals of physics, mathematics and chemistry. Upon that foundation, students learn how to design hardware and software for scientific exploration. Coursework focuses on conceiving the requirements needed for a mission or project destined for space or extreme environments on Earth.

Each student in this program has the opportunity to learn how projects and missions are designed and planned, starting with the scientific drivers and then defining engineering specifications. All students are expected to complete a senior project that takes a desired scientific measurement and realizes the technological solution to achieve the observation.

In addition to the guidelines in the Concurrent Program Options section below, students interested in pursuing concurrent or second baccalaureate degrees in The College of Liberal Arts and Sciences are advised to visit The College's website for more information and requirements.
At a Glance

- **College/School:** The College of Liberal Arts and Sciences
- **Location:** Tempe
- **Additional Program Fee:** Yes
- **Second Language Requirement:** No
- **First Required Math Course:** MAT 265 - Calculus for Engineers I
- **Math Intensity:** Substantial

Required Courses (Major Map)

2023 - 2024 Major Map
Major Map (Archives)

Concurrent Program Options

Students pursuing concurrent degrees (also known as a "double major") earn two distinct degrees and receive two diplomas. Working with their academic advisors, students can create their own concurrent degree combination. Some combinations are not possible due to high levels of overlap in curriculum.

Accelerated Program Options

This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an accelerated bachelor's plus master's degree with:

- Astrophysics and Astronomy, MS
- Electrical Engineering, MSE
- Exploration Systems Design (Instrumentation), MS
- Exploration Systems Design (Sensor Networks), MS
- Exploration Systems Design (Systems Engineering), MS
- Exploration Systems Design, MS

Acceptance to the graduate program requires a separate application. Students typically receive approval to pursue the accelerated masterâs during the junior year of their bachelor's degree program. Interested students can learn about eligibility requirements and how to apply.

Admission Requirements

General University Admission Requirements:
All students are required to meet general university admission requirements.

First-year | Transfer | International | Readmission

**Tuition Information**

When it comes to paying for college, everyone’s situation is different. Students can learn about ASU tuition and financial aid options to find out which will work best for them.

**Change of Major Requirements**

A current ASU student has no additional requirements for changing majors.

Students should visit the Change of Major form for information about how to change a major to this program.

**Transfer Options**

ASU is committed to helping students thrive by offering tools that allow personalization of the transfer path to ASU. Students may use MyPath2ASU® to outline a list of recommended courses to take prior to transfer.

ASU has transfer partnerships in Arizona and across the country to create a simplified transfer experience for students. These pathway programs include exclusive benefits, tools and resources, and they help students save time and money in their college journey.

**Global Opportunities**

**Global Experience**

Space exploration is an international endeavor, and an international experience provides students opportunities for cross-cultural engagement and improving language and communication skills. Global Education allows students to take relevant classes while living in another country. Each of the more than 300 Global Education program options provide an opportunity for you to develop a valuable skill set that can give you an advantage in your career and personal enrichment. Whether in a foreign country, in the U.S. or online, Global Education programs encourage you to build communication skills, challenge you to adapt and persevere, expose you to differences across the world and increase your ability to work with diverse groups of people.

**Career Opportunities**

Career opportunities include:
• astronomer
• geoscientist
• planetary scientist
• science policy intern
• science writer
• scientific instrumentation specialist
• space systems engineer
• systems engineer

Sample career settings include:

• aerospace industry
• federal government
• manufacturing
• NASA centers
• national laboratories
• observatories
• publishers
• space industries
• universities and colleges

This program also provides suitable preparation for graduate study.

Career example titles and salaries listed below are not necessarily entry level, and students should take into consideration how years of experience, geographical location, and required advanced degrees or certifications may affect pay scales.

<table>
<thead>
<tr>
<th>Career</th>
<th>*Growth</th>
<th>*Median Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineer</td>
<td>6.1%</td>
<td>$126,880</td>
</tr>
<tr>
<td>Computer Science Professor</td>
<td>5.3%</td>
<td>$84,760</td>
</tr>
<tr>
<td>Computer Software Quality Engineer</td>
<td>20.3%</td>
<td>$99,620</td>
</tr>
<tr>
<td>Computer Systems Architect</td>
<td>9.7%</td>
<td>$98,740</td>
</tr>
<tr>
<td>Electrical Engineering Professor</td>
<td>9.3%</td>
<td>$103,550</td>
</tr>
<tr>
<td>Engineering Manager</td>
<td>4.1%</td>
<td>$159,920</td>
</tr>
<tr>
<td>Supply Chain Engineer</td>
<td>11.7%</td>
<td>$96,350</td>
</tr>
</tbody>
</table>

* Data obtained from the Occupational Information Network (O*NET) under sponsorship of the U.S. Department of Labor/Employment and Training Administration (USDOL/ETA).

🌞 Bright Outlook

Contact Information